Amendments to the Specification:

Please replace the paragraph at page 2, lines 5-17 with the following amended paragraph:

The present invention therefore provides nucleic acids encoding meiotic recombination 11 (MRE11), which is a nuclease protein with exo- and endonuclease activity involved in modulation of DNA damage assessment and checkpoint regulation, and cellular proliferation. The present invention shows for the first time that mutant MRE11 is antiproliferative in tumor cells. The invention therefore provides methods of screening for compounds, e.g., small organic molecules, antibodies, peptides, cyclic peptides, nucleic acids, antisense molecules, RNAi, and ribozyme, that are capable of modulating cellular proliferation, e.g., either inhibiting cellular proliferation or activating apoptosis. The compounds of the invention are also useful for enhancing sensitivity of a cell to chemotherapeutic agents such as bleomycin and etoposide, and/or to reducing toxicity of chemotherapeutic agents. Therapeutic and diagnostic methods and reagents are also provided. Modulators of MRE11 are therefore useful in treatment of cancer, inflammation, and other diseases involving cellular proliferation.

Please replace the paragraph at page 3, line 29 through page 4, line 4 with the following amended paragraph:

In another aspect, the present invention provides a method for identifying a compound that modulates cellular proliferation or chemosensitivity, the method comprising the steps of: (i) contacting the compound with an MRE11 polypeptide or a fragment thereof, the MRE11 polypeptide or fragment thereof encoded by a nucleic acid that hybridizes under stringent conditions to a nucleic acid encoded by a polypeptide comprising an amino acid sequence of SEQ ID NO:2; (ii) determining the physical effect of the compound upon the ~~SAK~~ MRE11 polypeptide; and (iii) determining the chemical or phenotypic effect of the compound upon a cell comprising an MRE11 polypeptide or fragment thereof, thereby identifying a compound that modulates cellular proliferation or chemosensitivity.